

**REMARKS**

Claims 1-4, 7-11 and 14-22 are pending in the present application.

**Claim Rejections-35 U.S.C. 102**

Claims 1, 2, 9 and 16-18 have been rejected under 35 U.S.C. 102(b) as being anticipated by the Sony reference (Japanese Patent Publication No. 2000-133572).

This rejection is respectfully traversed for the following reasons.

Similarly as in the Amendment dated May 31, 2006, the following comments are offered in view of the English language translation that corresponds to Japanese Patent Publication No. 2000-133572 (which is misidentified as for Japanese Application Laid-Open No. 2000-150358).

As described beginning on page 9, line 17 of the present application, the cover film is formed in a pattern having a shape formed of sides of a polygon that are obtained by eliminating corners from the polygon. Typically, a cover film formed over an insulation film has poor contact with the underlying insulation film. If the cover film is deposited in an expanded area over the insulation film, the cover film is apt to separate in later processes. In order to prevent this occurrence, the cover film of an embodiment of this application is formed on and in the same shape as the pattern of the alignment mark, to thus effectively prevent oxidation of the alignment mark and at the same time to prevent separation of the oxidation prevention cover film.

The semiconductor device of claim 1 includes in combination a substrate which has a main surface; an alignment mark "which is formed on the main surface and which has a pattern, wherein the pattern in a plane view has a shape that is obtained by eliminating corners from a polygon"; and an oxidation prevention cover film "on the alignment mark and formed as having the pattern". Applicant respectfully submits that the Sony reference as relied upon by the Examiner does not disclose these features.

As noted above, the semiconductor device of claim 1 includes an oxidation prevention cover film on the alignment mask, the oxidation prevention cover film having the pattern in a plane view, wherein the pattern has a shape obtained by eliminating corners from a polygon.

The Examiner has interpreted layers 15/16 in Fig. 4 of the Sony reference as the oxidation prevention cover film of claim 1. However, as emphasized in the Amendment dated May 31, 2006, silicon dioxide layer 15 and photoresist 16 are not specifically described in the Sony reference as having oxidation prevention characteristics. The Examiner has failed to specifically address this issue on the record.

Even assuming for the sake of argument that silicon dioxide layer 15 and photoresist 16 of the Sony reference can be considered as oxidation preventive layers (which Applicant does not concede), both of silicon dioxide layer 15 and photoresist 16 as shown in Fig. 4 of the Sony reference are formed over the entirety of the structure. Silicon dioxide layer 15 and photoresist 16 in Fig. 4 of the Sony et al. reference thus cannot be interpreted as an oxidation prevention cover film formed on an alignment

mark, and formed as having the pattern of the alignment mark, as featured in claim 1. Silicon dioxide layer 15 and photoresist 16 of the Sony reference do not cover and prevent oxidation of an alignment mark, and at the same time are not provided so as to prevent separation during later processes. Applicant therefore respectfully submits that the semiconductor device of claim 1 distinguishes over the Sony reference as relied upon by the Examiner, and that this rejection, insofar as it may pertain to claims 1 and 2, is improper for at least these reasons.

The semiconductor device of claim 9 includes in combination a substrate; an alignment mark "which if formed on the main surface and which has first through fourth sub-patterns, wherein the first and second sub-patterns are arranged so as to oppose each other, the third and fourth sub-patterns are arranged so as to oppose each other, and the first through fourth sub-patterns are separated from one another"; and an oxidation prevention cover film "on the alignment mark and formed as having the first through fourth sub-patterns".

The Examiner has interpreted silicon dioxide layer 15 and photoresist 16 in Fig. 4 of the Sony reference as the oxidation prevention cover film. However, as may be readily understood in view of Fig. 4 of the Sony reference, silicon dioxide layer 15 and photoresist 16 are formed on the entirety of the structure as illustrated. Silicon dioxide layer 15 and photoresist 16 therefore cannot be interpreted as an oxidation prevention cover film on an alignment mark, and formed as having first through fourth sub-patterns of the alignment mark, as would be necessary to meet the features of claim 9. Silicon

dioxide layer 15 and photoresist 16 in Fig. 4 of the Sony reference are thus not provided so as to prevent separation in later processes. Applicant therefore respectfully submits that the semiconductor device of claim 9 distinguishes over the Sony reference as relied upon by the Examiner, and that this rejection of claim 9 is improper for at least these reasons.

The semiconductor device of claim 16 includes in combination a substrate; an alignment mark; and an oxidation prevention cover film "on the alignment mark, wherein the oxidation prevention cover film is strip-like and has annular shape along another plane parallel to the main surface of the substrate".

The Examiner has interpreted silicon dioxide layer 15 and photoresist 16 in Fig. 4 of the Sony reference as the oxidation prevention cover film of claim 16. However, since silicon dioxide layer 15 and photoresist 16 as illustrated in Fig. 4 of the Sony reference are formed over the entirety of the structure, these layers clearly cannot be interpreted as an oxidation prevention cover film that is strip-like, and that has annular shape, as would be necessary to meet the features of claim 16. Applicant therefore respectfully submits that the semiconductor device of claim 16 distinguishes over the Sony reference as relied upon by the Examiner, and that this rejection of claims 16-18 is improper for at least these reasons.

**Claim Rejections-35 U.S.C. 103**

Claims 3, 7, 8, 10, 14, 15, 19, 20 and 22 have been rejected under 35 U.S.C.

103(a) as being unpatentable over the Sony reference. This rejection is respectfully traversed for the following reasons.

As noted above, the Sony reference as relied upon by the Examiner does not disclose an oxidation prevention cover film as would be necessary to meet the features of respective independent claims 1, 9 and 16. The Sony reference as herein relied upon does not overcome this deficiency. Applicant therefore respectfully submits that this rejection is improper for at least these reasons.

With further regard to claim 7, since the Sony reference does not disclose an oxidation prevention cover film having the pattern as featured, the Sony reference clearly would not make obvious an oxidation prevention cover film pattern width that is 1 micron to several micron wider at one side than an alignment mark pattern width, as would be necessary to meet the features of claim 7. That is, silicon dioxide layer 15 and photoresist 16 as illustrated in Fig. 4 of the Sony reference are formed over the entirety of the structure. Applicant therefore respectfully submits that the semiconductor device of claim 7 would not have been obvious in view of the prior art as relied upon for at least these additional reasons. Applicant also respectfully submits that claims 14 and 20 would not have been obvious in view of the prior art as relied upon by the Examiner for at least somewhat similar reasons.

Moreover, since the Sony reference does not disclose or even remotely suggest an oxidation prevention cover film having the pattern or shape as featured in the claims, the Sony reference clearly fails to make obvious an iridium-based metal oxidation

prevention cover film as featured in respective claims 8, 15 and 22. Applicant therefore respectfully submits that claims 8, 15 and 22 would not have been obvious in view of the Sony reference as relied upon for at least these additional reasons.

Claims 4, 11 and 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Sony reference, in view of the Sato reference (Japanese Patent Publication No. 2002-64055). Applicant respectfully submits that the Sato et al. reference as herein relied upon does not overcome the above noted deficiencies of the Sony reference, and that this rejection of claims 4, 11 and 21 is improper for at least these reasons.

### **Conclusion**

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejections, and to pass the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (571) 283-0720 in the Washington, D.C. area, to discuss these matters.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicant hereby petitions for an extension of three (3) months to September 1, 2006, for the period in which to file a response to the outstanding Office Action. The required fee of \$1020.00 should be charged to Deposit Account No. 50-0238.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

VOLENTINE FRANCOS & WHITT, P.L.L.C.

A handwritten signature in black ink, appearing to read "A. J. Telesz, Jr.", with a stylized flourish at the end.

Andrew J. Telesz, Jr.  
Registration No. 33,581

One Freedom Square  
11951 Freedom Drive, Suite 1260  
Reston, Virginia 20190  
Telephone No.: (571) 283-0720  
Facsimile No.: (571) 283-0740